CLAIMS

I claim:

1. A tungsten-based catalyst for a fuel cell comprising $H_{0.53}WO_3$ dispersed on a catalyst support.

2. The catalyst of claim 1 wherein the catalyst support is carbon black.

3. The catalyst of claim 2 wherein the catalyst contains about 20% tungsten by weight.

4. A method of making a tungsten-based catalyst for a fuel cell, comprising:

(a) heating ammonium metatungstate in an inert atmosphere to form $(NH_4)_{0.33}WO_3$; and

(b) heating the $(NH_4)_{0.33}WO_3$ in a hydrogen-containing atmosphere to form $H_{0.53}WO_3$.

5. The method of claim 4 wherein the ammonium metatungstate is heated at about 490°C.

6. The method of claim 5 wherein the ammonium metatungstate is dehydrated prior to heating at about 490°C.

7. The method of claim 6 wherein the ammonium metatungstate is dehydrated at a temperature from about 120°C to about 200°C.

8. The method of claim 5 wherein prior to heating the ammonium metatungstate has been dispersed on a carbon black support.

9. The method of claim 8 wherein after the ammonium metatungstate has been dispersed on the support, the support contains about 20% tungsten by weight.

10. A fuel cell comprising an anode and a cathode wherein the anode and cathode are comprised of an electrocatalyst which consists essentially of a tungsten-based electrocatalyst.

11. The fuel cell of claim 10 wherein the tungsten-based electrocatalyst is $H_{0.53}WO_3$ dispersed on a carbon black support.

12. The fuel cell of claim 11 wherein the electrocatalyst contains about 20% tungsten by weight.

13. The fuel cell of claim 11 wherein the anode and cathode are separated by a polymer membrane.

14. The fuel cell of claim 13 wherein the polymer membrane is a perfluorosulfonic acid polymer.

15. The fuel cell of claim 14 wherein the fuel cell uses hydrogen as a fuel and air as an oxidant.

16. The fuel cell of claim 10 wherein the fuel cell is a PEM-type fuel cell.